Dart Aerospace Ltd. Tuesday, 1/8/2008 1:20:05 PM Kim Johnston **Process Sheet** : BRACKET ASSEMBLY : CU-DAR001 Dart Helicopters Services **Drawing Name** Customer Job Number : 36664 **Estimate Number** : 10279 Part Number : D3121143 P.O. Number · D3121 REV E : 1/8/2008 S.O. No. : **Drawing Number** This Issue : N/A Prsht Rev. : NC Project Number : MACHINED PARTS First Issue : // Type **Drawing Revision** ; E : 36630 Material Previous Run **Due Date** : 2/15/2008 Qty: 6 Um: Written By Checked & Approved By : Est Rev. Pick: A 04.02.18 New issue KJ/DS Comment Est Rev:B ECN 1060 07-11-12 DD verified by:EC Additional Product Job Number: Seq. #: Machine Or Operation: Description: 17-4 SS Bar M174B1000X02000 1.0 Comment: Qtv.: 0.3864 f(s)/Unit Total: 2.3184 f(s) Material: 17-4 SS Bar per AMS 5604/5643 (M17-4-B1.000x02.000) Identify for D3121-113 Batch: 10274 BAND SAW BAND SAW 2.0 Comment: BAND SAW Cut blanks: (1.000" x 2.000") 4.425" long 3.0 HAAS CNC VERTICAL MACHINING #1 Comment: HAAS CNC VERTICAL MACHINING #1 1-Machine D3121-113 as per Folio FA330 and Dwg D3121 Identify as D3121-113

2-Deburr

3-Scribe batch number

4.0 QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE



Each

Dart Aerospace Ltd

	WORK ORDER CHANGES					
STEP	PROCEDURE CHANGE	Ву	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
					1	
	. (
7	STEP	STEP PROCEDURE CHANGE	STEP PROCEDURE CHANGE By	STEP PROCEDURE CHANGE By Date	STEP PROCEDURE CHANGE By Date Qty	STEP PROCEDURE CHANGE By Date Qty Chief Eng / Prod Mgr

Part No: D3:21-143 PAR #: HA Fault Category: Food Machined Pinch: Yes No DQA: Date: 68/02/06

QA: N/C Closed: Date: 08/02/06

NCR:	3666	W	ORK OR	DER NON-CONFORMANC	E (NCR)			
DATE	STEP	Description of NC Section A	Initial Chief Eng	Corrective Action Section B Action Description Chief Eng	Sign & Date	Verification Section C	Approval Chief Eng	Approval QC Inspector
05/20		first parts move on of the sig. m/oo LC. No Hoo IN progrew-operator don't but	Laper	Scrap : replace Qtyl B m 102741	8.F 08/02/20	14.025	pson	70001-16
૦૬૫૨૬		about the programa 3ports scrap, enveres not deep enough.	osiuz	Scrapi, repline aty 3 B M02741	08/02/30	100 25	સ્કાવદ	0601-25
					Jedj			

NOTE: Date & initial all entries

Tuesday, 1/8/2008 1:20:05 PM Date: User:--Kim Johnston **Process Sheet** Drawing Name: BRACKET ASSEMBLY Customer: CU-DAR001 Dart Helicopters Services Part Number: D3121143 Job Number: 36664 Job Number: Description: Seq. #: Machine Or Operation: SECOND CHECK 5.0 QC8 Comment: SECOND CHECK D312121 2:0000 Each(s)/Unit Total: 12.0000 Each(s) Comment: Qty.: Pick: Description Batch **Qty Part Number** Bolt \$37478 2 D3121-21 Bearing Assembly 7.0 D3121241 Comment: Qty.: 2.0000 Each(s)/Unit Total: 12.0000 Each(s) Qty Part Number Description Batch 2 D3121-241 Bearing Ass 8.0 SMALL FAB Comment: SMALL & MEDIUM FAB RESOURCE 1 Assemble D3121-143 as per Dwg D3121. QC5 INSPECT WORK TO CURRENT STEP 9.0 Comment: INSPECT WORK TO CURRENT STEP PACKAGING 1 PACKAGING RESOURCE #1 Comment: PACKAGING RESOURCE #1 Identify and Stock Location: 11.0 QC21 Comment: FINAL INSPECTION/W/O RELEASE mi 2008/2/26 Job Completion

Form moress

Dart Aerospace Ltd

Dail Ae	ospace	s Liu							
W /O:			WO	RK ORDER CHANG	SES				
DATE STEP		PROCEDURE CHANGE				Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
Part No	:	PAR #:	Fault Categ	Jory:	NCR: Yes	No DQ	A:	Date: _	
					QA:	N/C Close	d:	Date: _	
NCR:		1	WORK ORDE	R NON-CONFORM	ANCE (NC	R)			
DATE	CTED	Description of NC		······································	tion B	Verifi	cation	Approval	Approval
DATE	STEP	Section A	Initial Chief Eng	Action Description Chief Eng	Sign Date		ion C	Chief Eng	QC Inspector
					;				
		1							[

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	36664
Description: Bracket	Part Number:	D3121-113
Inspection Dwg: D3121 Rev: DE		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Of DV OF X First Article Prototype

	wing	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
		+/-0.010	0.080	/			
	080		0.300	~			
U.,	300 6	+/-0.010					
	.54	+/-0.030	1.537	/			
	350	+/-0.010	0.3485	V			
	.25	+/-0.010-1.08	0.250				
	8 00 -	*/-0.030	_ () \6.10				
	0.392	+0.002/-0.000	0.392				
	0.201	+0.005/-0.000	0.203	1			
	100	+/-0.010	0.100	1			
	100						
2.	.540	+/-0.010	2,540	1			
	.590	+/-0.010	1,589				
0.	.160	+/-0.010	0.154				
0.	.400	+/-0.010	0.392	1			
1.	.220	+/-0.010	1.216				
1	.600	+/-0.010	1596				
3	3.80	+/-0.030	3,810				
1	.800	+/-0.010	1,796				
R	0.50🛭	+/-0.0 0	0.500	1/			
	.130	+/-0.010	0.126				
3	3.41	+/-0.030	3,395,				
	3.65	+/-0.030	3.624				
	2.24	+/-0.030	2.215				
	45°	1/- 10+1=0.1°	450,				
R	0.25 ø	+/-0.030	,250			1	
	3.97	+/-0.030	3.978				
F	30.38	+/-0.030	0.3%	1			
Ø	0.392	+0.002/-0.000	0,392			-	
Ø	0.201	+0.005/-0.000	0.203				
-().400	3 40 010		 			
(0.268	+/-0.010	0.268	<u> </u>			
R	0.260	+/-0.010	.260	1,			
. (0.080	+/-0.010	0.080	/			
(0.300	+/-0.010	0.300				· · · · · · · · · · · · · · · · · · ·

DART AEROSPACE LTD	Work Order:	36664
Description: Bracket	Part Number:	D3121-113
Inspection Dwg: D3121 Rev: DE		Page 2 of 2

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

	L				<u></u>	
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.381	+/-0.010	0.375	1			
0.201	+/-0.010	0.206				
0.580	+/-0.010	0.206	/_			
0.400	+/-0.010	0,402	/			
100°	1012	100°	✓			
0.032	76 D.C. 5 - D.61 C	0.027	J			
		·				

Measured by:	Audited by:	In Ind	Prototype Approval:	N/A
Date: 08/02/21	Date:	08/02/21	Date:	N/A

Rev	Date	Change	Revised by	Approved
Δ	03.12.08	New Issue P/O D3121-143	KJ/RF	
B		Dimensions changed/re-arranged per Dwg revision	KJ/JLM	
C	06.06.14	Dwg Rev. updated	KJ/JLM J	



#		LE	HAWKESBURY, ONTARIO, CANADA
CHEC	KED	APPROVED	DRAWING NO. REV. E
	4	#	D3121 SHEET 1 OF 10
DATE			TITLE SCALE
07.1	11.07		BRACKET ASSEMBLY 1:2
Α		02.04.15	NEW ISSUE
В		03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD -141/-143/-144/-145/-146
C		04.02.17	ADD CLEARANCE; USE -241 BEARING
D		06.05.17	D3121-25 CAP WAS 1.024, NOW 1.000

DART AFROSPACE LTD

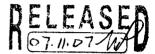
ADD TOLERANCE TO 0.032 (DETAIL B)

DRAWN BY

07.11.07

DESIGN

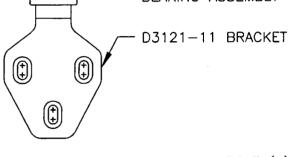
Ε



- D3121-2	1 BOLT	(1)
D3121-2	241	
BEARING	ASSEMBL	Y (1)

D3121-041 BRACKET ASSEMBLY

(REPLACES PREMIER P/N B30-23000-33)

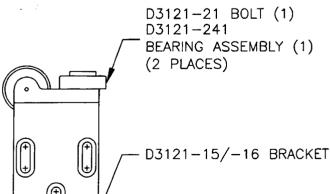


D3121-21 BOLT (1) D3121-241 BEARING ASSEMBLY (1) (2 PLACES)

D3121-13/-14 **BRACKET**

D3121-043 (SHOWN) / D3121-044 (OPPOSITE) BRACKET ASSEMBLY

(REPLACES PREMIER P/N B30-23000-37/-38)



D3121-21 BOLT (1) D3121-241 BEARING ASSEMBLY (1) (2 PLACES)

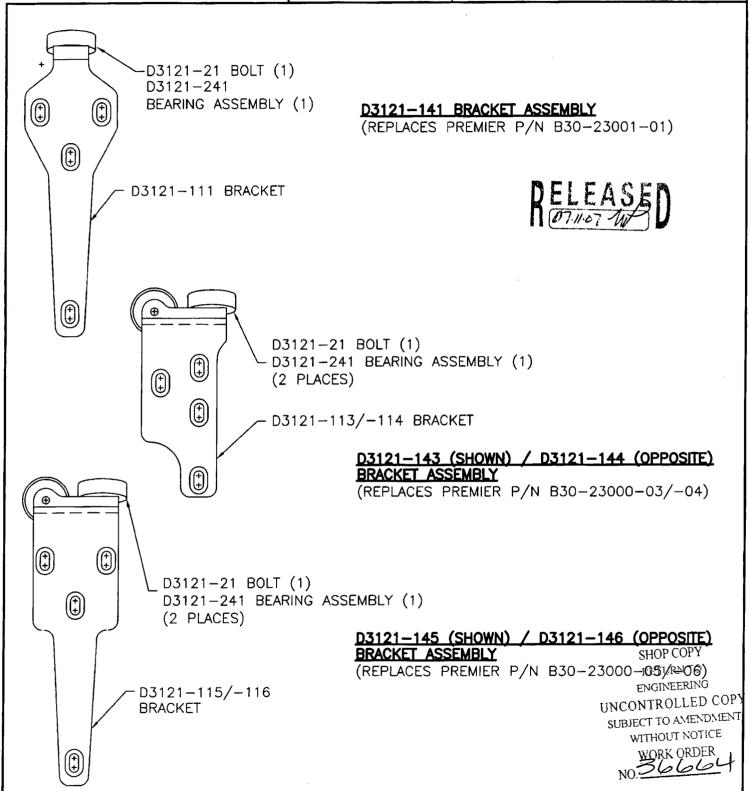
D3121-045 (SHOWN) / D3121-046 (OPPOSITE) BRACKET ASSEMBLY (REPLACES PREMIER P/N B30-23000-35/-36)

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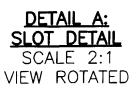


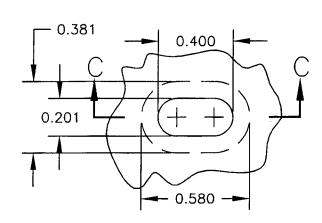
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4		D3121	SHEET 2 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2

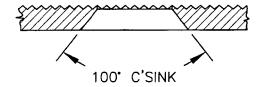




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4	-	D3121	SHEET 3 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:1

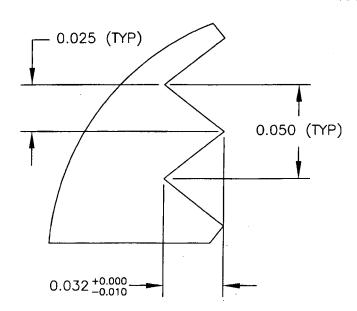






SECTION

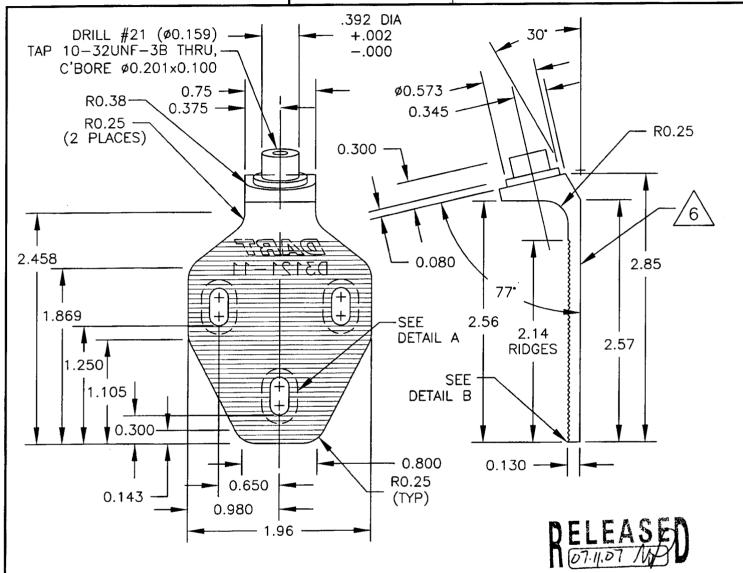
<u>DETAIL B:</u> <u>RIDGE DETAIL</u> PARTIAL SECTION SCALE 1:20



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#	-#	D3121	SHEET 4 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:1



D3121-11 BRACKET

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B) MIN ULTIMATE TENSILE = 150 ksi

MIN YIELD TENSILE = 100 ksi

2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

3) ALL DIMENSIONS ARE IN INCHES

4) BREAK ALL SHARP EDGES 0.005 TO 0.015

5) ENGRAVE DART P/N & LOGO AS SHOWN

6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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#	-#	D3121	SHEET 5 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



0

1.280

0.960

0.330

0.400

DA\BT

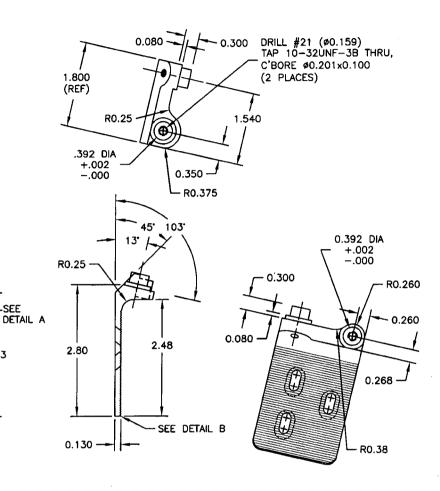
D3121-13 \bigoplus

1.220 – 1.800 *-*

 \bigoplus

SEE

2.63



D3121-13 BRACKET (SHOWN) D3121-14 BRACKET (OPPOSITE)

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B) MIN ULTIMATE TENSILE STRENGTH = 150 ksi

MIN YIELD TENSILE STRENGTH = 100 ksi

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

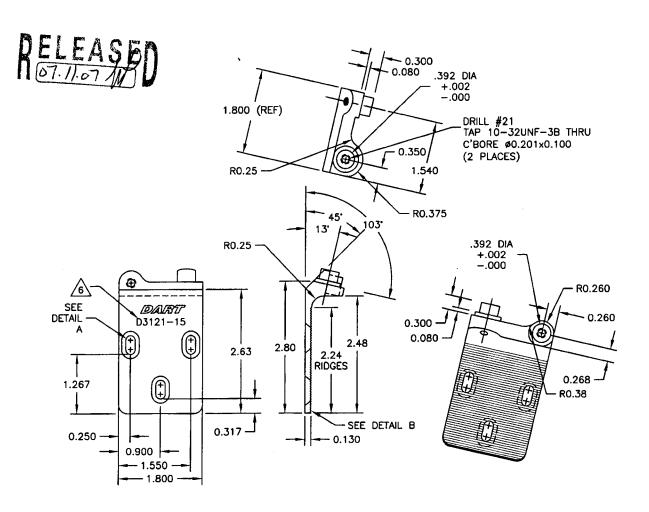
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#		D3121	SHEET 6 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



D3121-15 BRACKET (SHOWN) D3121-16 BRACKET (OPPOSITE)

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B) MIN ULTIMATE TENSILE = 150 ksi

MIN YIELD TENSILE = 100 ksi

- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N AND LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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SUBJECT TO AMENDMENT

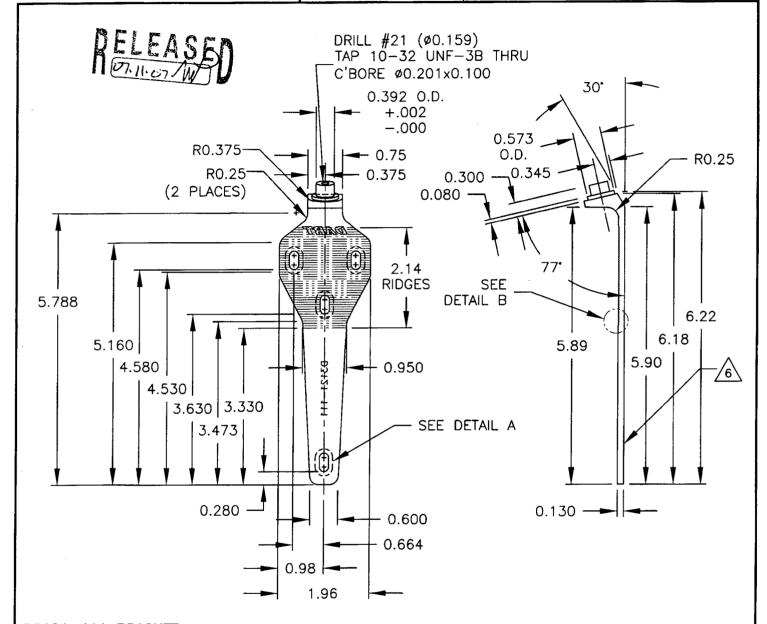
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4		D3121	SHEET 7 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



D3121-111 BRACKET

1) REPLACES PREMIER P/N B32-23001-11

2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)

MIN ULTIMATE TENSILE = 150 ksi MIN YIELD TENSILE = 100 ksi

3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHEWISE NOTED

4) ALL DIMENSIONS ARE IN INCHES

5) BREAK ALL SHARP EDGES 0.005 TO 0.015

6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN

7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

SHOP COPY RETURN TO

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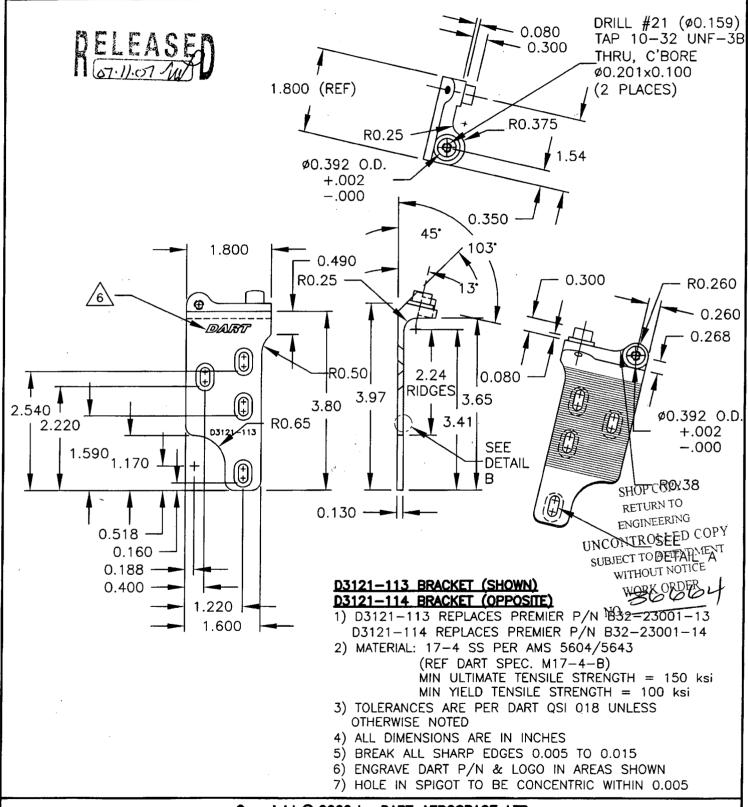
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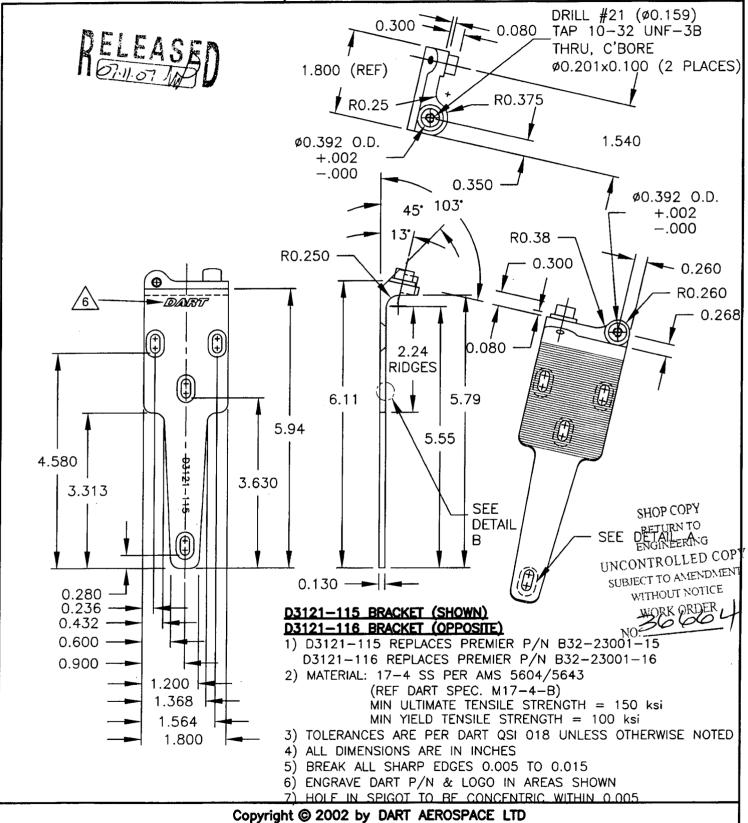
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4	-#	D3121	SHEET 8 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



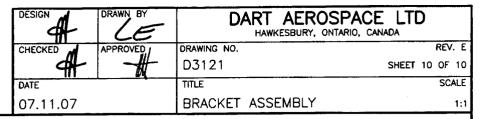
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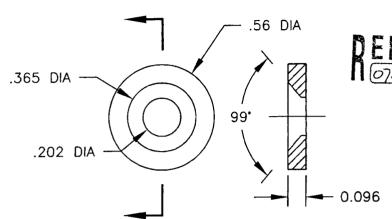


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#	-#	D3121	SHEET 9 OF 10
DATE		TITLE	SCALE
07.11.07		BRACKET ASSEMBLY	1:2



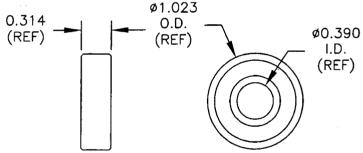






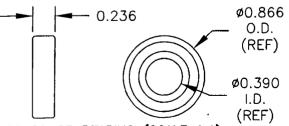
D3121-17 WASHER (SCALE 2:1)

- 1) REPLACES PREMIER P/N B32-23001-17
- 2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015



D3121-19 BEARING (SCALE 1:1)

- 1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-2ZJ/EM FAFNIR P/N 9100KDD
- 2) ALL DIMENSIONS ARE IN INCHES



D3121-23 BEARING (SCALE 1:1)

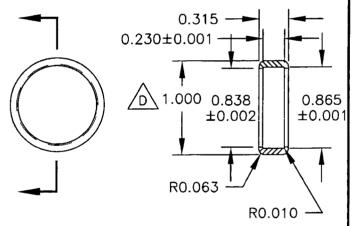
1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z OR KML P/N 6900-ZZ

ALL DIMENSIONS ARE IN INCHES

0.375 TAP 10-32 UNF-3A - 0.080 - 0.050 TO 0.060

D3121-21 BOLT (SCALE 1:1)

- 1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
- NONE FINISH:
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

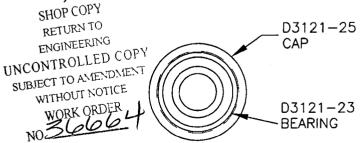


D3121-25 CAP (SCALE 1:1)

1) MATERIAL: DELRIN ROD, Ø1.25

(REF DART SPEC. M-DELRIN-R1.250)

- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES



D3121-241 BEARING ASSEBLY (SCALE 1:1)

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